

## YEAR 7 SUMMER ASSESSMENT 2024 – MARK SCHEME

### Section 1 Organisms: Cells and movement

Q1.a. Objective lens → To magnify the image of the specimen [1]

Mirror → To direct light into the viewers eye [1]

b. Chloroplast [1]

c. No sunlight for photosynthesis/ Onions are underground so get no sunlight [1]

**Total for this section: 4 marks**

### Section 2 Origins: Variation and human reproduction

Q2.a. Controls the activities of the cell/ Contains DNA [1]

b. Has a tail to swim (to the egg) [1]

c. Oviduct [1]

d. Testes [1]

Q3. a. One mark for each of the following: **Maximum 4 marks**

Suitable (even) scale starting at zero on the y axis [1]

X and Y axis labelled correctly (X = Name of mammal, Y = Average length of pregnancy/ days) [1]

3 bars plotted correctly (within 1/2 mm) [1]

OR All bars plotted correctly [2]

**Total for this section: 8 marks**

### Section 3 Cycles and interactions: Interdependence and plant reproduction

Q4a. Herbivore [1]

b. The wheat makes food by photosynthesis [1]

Q5a. Greater burdock

Hooks attach it to animals/ fur/ clothes [1]

*Do not accept 'it is carried by animals'*

Dandelions

Hairs/ parachute carry it in the wind [1]

*Do not accept 'it is carried in the wind'*

b. Any one from: Light/ Water (from the soils)/ Minerals (from the soil) [1]

Q6.a. Any one from: Large leaves/ Waxy leaves/ Flexible stems/ Leaves float [1]

b. Attract bees or insects or (Easily) seen by bees or insects [1]

AND (therefore) more likely to be pollinated [1]

**Total for this section: 8 marks**

### Section 4 Matter: Particle model and separation techniques

Q7.a Ice [1]

Water [1]

Steam [1]

*In this order only*

Q8. a. Top image → Chromatography [1]

Second image → Distillation [1]

Q9. a. When marking this question you must first give the students a level of response. Once this is decided a mark within that level is awarded. The indicative content is a list of possible answers that could be included is not a exhaustive list students may include other relevant Scientific knowledge. The indicative content should not be used as a list of marking points to award a mark out of 6.

Level of answer	Level descriptor	Marks available
Level 3	The method would lead to the production of a valid outcome. The key steps are identified and logically sequenced.	5 – 6 marks
Level 2	The method would not necessarily lead to a valid outcome. Most steps are identified, but the method is not fully logically sequenced.	3 – 4 marks
Level 1	The method would not lead to a valid outcome. Some relevant steps are identified, but links are not made clear.	1 – 2 marks

Indicative content:

Independent variable – Type of metal

Dependent variable – Reactivity of metals

Control variable – Volume of hydrochloric acid, Strength of hydrochloric acid, mass of metal.

- Measure 25ml (any sensible volume) of hydrochloric acid using a measuring cylinder.
- Pour the hydrochloric acid into the test tube.
- Add zinc to the test tube.
- Measure the reactivity of the metal (any sensible suggestion of how to measure the reactivity e.g. see how much it fizzes, time how long it fizzes for)
- Repeat with each of the metals.

b. Award mark for any sensible safety precaution [1]

e.g. Wear goggles/Stand up while working.

c. Toxic [1]

Irritant [1]

*In this order only*

d. Magnesium chloride [1] + Hydrogen [1]

*In either order*

- Q10. a. Lemonade OR Orange juice [1]  
b. Purple OR Blue [1]  
c. Bubbles/ Fizzing/ Effervesce [1]  
d. Neutralisation [1]

**Total for this section: 15 marks**

## **Section 6 Waves: Light and sound**

### **Q11.**

Continuous straight line from the sun to the mirror and from the mirror to the village [1]  
Angle of incidence approximately equal to the angle of reflection [1]  
Arrows in the correct direction on the incident and reflected ray [1]  
*Maximum of 3 marks*

- Q12. a. Refraction [1]  
b. Light changes speed/ slows down [1]  
*Accept because the glass is more dense*

**Total for this section: 5 marks**

## **Section 6 Energy: Energy cost and transfer**

Q13. Biofuel [1]  
Geothermal [1]

- b. It is predictable [1]  
  
c. = 60,000 / 60 [1]  
1000W [1]

**Total for this section: 5 marks**

## **Section 7 Electricity and magnetism**

- Q14. a. Steel/ Nickel/ Cobalt [1]  
b. An electromagnet can be switched on and off [1]  
c. Number of coils of wire (around the nail) [1]

d. Any one from: Size of the paper clip/ Battery/ Thickness of the wire [1]

e. The more coils of wire the more paper clips picked up [1]

OR The more coils of wire the stronger the electromagnet

Accept the opposite e.g. The less coils of wire the fewer paper clips picked up

**Total for this section: 5 marks**

### **Section 8 Forces: Speed and gravity**

Q15. a. Gravity [1]

b. The downward force is the same [1]

c. Weight OR Gravity [1]

d.  $= 55 \times 9.8$  [1]

539N [1]

**[END OF QUESTIONS]**